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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/960,374	09/24/2001	Haruyoshi Yamada	110675	7503

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OLIFF & BERRIDGE, PLC
P.O. BOX 19928
ALEXANDRIA, VA 22320

EXAMINER

NGUYEN, MICHELLE P

ART UNIT

PAPER NUMBER

2851

DATE MAILED: 10/25/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/960,374

Applicant(s)

YAMADA ET AL.

Examiner

Michelle Nguyen

Art Unit

2851

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 19 December 2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-17 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-17 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 24 September 2001 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 1.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Specification

1. The disclosure is objected to because of the following informalities:
 - (a) On Pg. 2, line 15, "pair of opening" should be --pair of openings--.
 - (b) On Pg. 18, line 6, "pair of opening" should be --pair of openings--.Appropriate correction is required.

Drawings

2. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the dust filter must be shown or the feature canceled from the claims (see claims 7, 17). No new matter should be entered.

A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

Further, applicant notes in the specification on Pg. 11, line 15, that the dust filter is not shown. Appropriate correction of the specification is required.

Claim Objections

3. Claims 1-4 and 9-14 are objected to because of the following informalities:
 - (a) In claim 1, line 12, "pair of opening" should be --pair of openings--.
 - (b) In claim 1, line 14, "shutter" should be deleted.
 - (c) In claim 2, line 1, "the pair of opening is a recess" should be --the pair of openings comprises recesses--.

- (d) In claim 3, line 1, "pair of opening" should be --pair of openings--.
- (e) Claim 4 recites the limitation "the opening" in line 2. There is insufficient antecedent basis for this limitation in the claim.
- (f) In claim 9, line 2, "inserted to" should be --inserted into--.
- (g) Claim 10 recites the limitation "the base end" in line 2. There is insufficient antecedent basis for this limitation in the claim.
- (h) Claim 11 recites the limitation "the base end" in line 2. There is insufficient antecedent basis for this limitation in the claim.
- (i) In claim 12, lines 1-2, "the pair of opening is a recess" should be --the pair of openings comprises recesses--.
- (j) In claim 13, line 1, "pair of opening" should be --pair of openings--.
- (k) Claim 14 recites the limitation "the opening" in line 2. There is insufficient antecedent basis for this limitation in the claim.

Appropriate correction is required.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 1-17 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 6,398,366 to Hara et al. in view of U.S. Patent No. 5,760,875 to Daijogo et al.

With regard to claim 1, Hara et al. disclose a light source used for a projector for modulating a light irradiated from a source lamp to form an optical image in accordance with image information and enlarging and projecting the optical image, comprising:

a source lamp (lamp valve 6a) (see Figs. 6, 7);

a reflector (reflector 6b) for aligning and emitting the light irradiated from the lamp valve 6a (see Figs. 6, 7); and

a case (lamp box 41) for accommodating the lamp valve 6a and the reflector 6b (see Figs. 6-8),

wherein a light-emitting surface of the reflector 6b is covered by a light-transmissive plate (glass plate 53), and

wherein the lamp box 41 includes a cooling channel (air intake port 47) for introducing a cooling air to the lamp valve 6a and a cooling channel shutter (opening/closing mechanism 54) for shutting the air intake port 47 when the lamp box 41 is detached from the projector and for opening the air intake port 47 when the lamp box 41 is attached to the projector (see Col. 10, lines 22-35, Figs. 6, 7).

Hara et al. do not teach the air intake port 47 to introduce the cooling air to the lamp valve 6a through a pair of openings, the openings being formed on a contact surface of the glass plate 53 and the reflector 6b and being symmetrically disposed around an optical axis of the reflector 6b. Instead, Hara et al. teach the air intake port 47 to introduce the cooling air to the lamp valve 6a through one opening (opening 49), the opening being formed on a contact surface of the glass plate 53 and the reflector 6b (see Col. 9, lines 50-57, Figs. 6, 7). However, Daijogo et al. teach that it is well known

in the art to introduce cooling air to a source lamp (lamp 102) through a pair of openings (two notches), the notches being openings formed on a contact surface of a light transmissive plate and a reflector (reflecting mirror 101) and being symmetrically disposed around an optical axis of the reflecting mirror 101 (see Fig. 7). Further, Daijogo et al. teach the notches to maximize cooling efficiency (see Col. 3, lines 21-9). Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to duplicate the opening of Hara et al., or replace the opening of Hara et al. with the notches as shown by Daijogo et al. to further improve cooling efficiency.

With regard to claim 2, Hara et al. teach the opening 49 as discussed above with respect to claim 1 to be a recess formed on the distal part of the reflector 6b in the light-emitting direction (see Col. 9, lines 50-7). Further, Daijogo et al. teach the notches as discussed above with respect to claim one to be recesses formed on the distal part of the reflecting mirror 101 in the light-emitting direction (see Fig. 7).

With regard to claim 3, Daijogo et al. show the notches as discussed above with respect to claim 1 to be horizontally disposed when the light source is detached from the projector (see Fig. 7).

With regard to claim 4, Hara et al. teach the automatic opening/closing mechanism 54 as discussed above with respect to claim 1 to include a lid member (shutter 55) rotatably supported to the lamp box 41 for shutting an opening (opening shown below the opening 49) formed on the lamp box 41 and a biasing member

(shutter spring 57) for biasing the shutter 55 in rotary direction (see Col. 10, lines 13-21, Figs. 6-8).

With regard to claim 5, Hara et al. teach the automatic opening/closing mechanism 54 as discussed above with respect to claim 1 to include a lid member (shutter 55) slidably supported by the lamp box 41 for shutting an opening (opening shown below the opening 49) formed on the lamp box 41 and a biasing member for biasing the shutter 55 in slide direction thereof (see Col. 10, lines 35-42).

With regard to claim 6, Hara et al. teach the lamp box 41 as discussed above with respect to claim 1 to be provided with a duct (air blasting duct 33), for guiding an air from an outside of the lamp box 41 to the air intake port 47 and/or from the air intake port 47 to the outside of the lamp box 41 (see Col. 8, lines 36-47, Col. 9, lines 40-50, Figs. 6, 7).

With regard to claim 7, Hara et al. do not teach a dust filter to be provided on the opening 49 as discussed above with respect to claim 1. Instead, Hara et al. teach a dust filter (dust preventative filter 40) to be provided on an opening of a fan that introduces the cooling air (see Col. 8, lines 59-67). However, it would have been obvious to one having ordinary skill in the art at the time the invention was made to place the dust preventative filter of Hara et al. on the opening to prevent dust from entering the lamp box or to duplicate the dust preventative filter such that a filter is placed on the opening to further prevent dust from entering the lamp box.

With regard to claim 8, see discussion above with respect to claim 1.

With regard to claim 9, Hara et al. teach the projector as discussed above with respect to claim 8 to comprise a duct (cooling air intake duct 46, connecting duct 48, air blasting duct 33) having an end (see cooling air intake duct 46) inserted into the automatic opening/closing mechanism 54 while being attached to the light source for introducing the cooling air into the light source (see Figs. 6, 7).

With regard to claim 10, Hara et al. disclose the projector as discussed above with respect to claim 9, wherein a fan (air blasting fan 32) for transferring the cooling air is provided on a base end of the duct 33 (see Col. 8, lines 4-7, Col. 9, lines 40-50).

With regard to claim 11, Hara et al. teach the projector as discussed above with respect to claim 9 to further comprise an exhaust duct (portion at the narrow end of the reflector 6b, the portion surrounding approximately half of a base 6c of a discharge lamp 6, and defining a passageway for the cooling air to be exhausted) for discharging the air having cooled the inside of the light source, a base end of the cooling air intake duct 46 being connected (via the reflector 6b) to the exhaust duct (see Col. 12, lines 1-26, Figs. 6, 7).

With regard to claim 12, see discussion above with respect to claim 2.

With regard to claim 13, see discussion above with respect to claim 3.

With regard to claim 14, see discussion above with respect to claim 4.

With regard to claim 15, see discussion above with respect to claim 5.

With regard to claim 16, see discussion above with respect to claim 6.

With regard to claim 17, see discussion above with respect to claim 7.

Conclusion

6. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. The following patents are provided to further show the state of the art.

U.S. Patent No. 5,722,753 to Okada et al. discloses a light source, wherein a pair of openings comprises recesses formed on the distal part of a reflector in a light-emitting direction.

U.S. Patent No. 5,860,719 to Suzuki et al. discloses a light source, wherein a pair of openings comprises recesses formed on the distal part of a reflector in a light-emitting direction.

U.S. Patent No. 6,398,367 to Watanabe discloses a projector comprising means for preventing fragments resulting from an explosion of a light source lamp or reflector from scattering to the inside of the projector.

U.S. Patent No. 6,443,575 to Miyamoto et al. discloses a projector comprising means for cooling a light source.

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michelle Nguyen whose telephone number is 703-305-2771. The examiner can normally be reached on M-F 8:30am-5:00pm.


If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Russ Adams can be reached on 703-308-2847. The fax phone numbers for the organization where this application or proceeding is assigned are 703-872-9318 for regular communications and 703-872-9319 for After Final communications.

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Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-305-4900.

mpn
October 23, 2002


RUSSELL ADAMS
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2800